Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 - 2.   (Canceled)

3.   (Currently Amended) The signal processing system of claim [[1]] __6__ wherein the voiceband signal comprises information modulated by a voiceband carrier.

4 - 5.   (Canceled)

6.   (Currently Amended) A signal processing system for processing modulated signals and voiceband signals for transmission over a packet based network, the signal processing system comprising:

means for receiving one of the modulated or voiceband signals at a respective input port;

means for detecting whether the received signal is a modulated signal or a voiceband signal by detecting presence of a predetermined tone;

a data pump for demodulating the received signal to generate a first data stream, if the received signal is a modulated signal;

a voice encoder for encoding the received signal to generate a second data stream, if the received signal is a voiceband signal;

a channel interface for outputting onto the packet based network the second data stream including the encoded voiceband signal or the first data stream including the demodulated signal, wherein the encoded information comprises voice signals;

a voice activity detector which suppresses the voice signals without speech; and

~~The signal processing system of claim 5 further comprising~~ a comfort noise estimator which generates comfort noise parameters when the voice activity detector suppresses the voice signals, said comfort noise parameters being selectively outputted on the packet based network.

7 - 8.   (Canceled)

9.   (Currently Amended) A signal processing system for processing modulated signals and voiceband signals for transmission over a packet based network, the signal processing system comprising:

means for receiving one of the modulated or voiceband signals at a respective input port;

means for detecting whether the received signal is a modulated signal or a voiceband signal by detecting presence of a predetermined tone;

a data pump for demodulating the received signal to generate a first data stream, if the received signal is a modulated signal;

a voice encoder for encoding the received signal to generate a second data stream, if the received signal is a voiceband signal;

a channel interface for outputting onto the packet based network the second data stream including the encoded voiceband signal or the first data stream including the demodulated signal, wherein the encoded information comprises voice signals;

a decoder for decoding packets of information from the packet based network, wherein the information packets include voice signals, the signal processing system further comprising a voice activity detector which detects the voice signals without speech, and a comfort noise generator which inserts comfort noise in place of the voice signals without speech; and

~~The signal processing system of claim 8 further comprising~~ a comfort noise estimator which generates comfort noise parameters from at least a portion of the voice signals without speech, the comfort noise generator being responsive to the comfort noise parameters.

10. (Currently Amended) The signal processing system of claim [[7]] 9 wherein the information packets include voice signals, the signal processing system further comprising a voice activity detector which detects lost voice signals, and a lost packet recovery engine which processes the voice signals to compensate for the lost voice signals.

11. (Currently Amended) The signal processing system of claim [[1]] _6_ further comprising a jitter buffer for receiving packets of information of varying delay from the packet based network and compensating for the delay variation of the information packets.

12. (Original) The signal processing system of claim 11 wherein the jitter buffer outputs an isochronous stream of the received information.

13. (Original) The signal processing system of claim 11 wherein the jitter buffer comprises a queue which buffers the received information for a holding time, and a voice synchronizer which adaptively adjusts the holding time of the queue.

14 - 15. (Canceled)

16. (Currently Amended) The method of claim [[14]] _19_ wherein the voiceband signal comprises information modulated by a voiceband carrier.

17 - 18. (Canceled)

19. (Currently Amended) A method of processing modulated signals and voiceband signals for transmission over a packet based network, the method comprising:

receiving one of the modulated or voiceband signals at a respective input port;

detecting whether the received signal is a modulated signal or a voiceband signal by detecting presence of a predetermined tone;

demodulating the received signal to generate a first data stream, if the received signal is a modulated signal;

encoding the received signal to generate a second data stream, if the received signal is a voiceband signal;

outputting onto the packet based network the second data stream including the encoded voiceband signal or the first data stream including the demodulated signal, wherein the encoded signal includes voice signals; and

suppressing the voice signals when the voice signals do not comprise speech,

~~The method of claim 18~~ wherein the suppression of the voice signals comprises generating comfort noise parameters in place thereof.

20. (Currently Amended) The method of claim [[14]] __19__ further comprising receiving information packets of varying delay from the packet based network, and compensating for the delay variation of the information packets.

21. (Original) The method of claim 20 wherein the information packet compensation comprises generating an isochronous stream of the information.

22. (Original)   The method of claim 21 wherein the isochronous stream generation comprises adaptively buffering the information.

23. (Canceled)

24. (Currently Amended) A method of processing modulated signals and voiceband signals for transmission over a packet based network, the method comprising:

receiving one of the modulated or voiceband signals at a respective input port;

detecting whether the received signal is a modulated signal or a voiceband signal by detecting presence of a predetermined tone;

demodulating the received signal to generate a first data stream, if the received signal is a modulated signal;

encoding the received signal to generate a second data stream, if the received signal is a voiceband signal;

outputting onto the packet based network the second data stream including the encoded voiceband signal or the first data stream including the demodulated signal; and

receiving packets of voice signals from the packet based network, identifying the received voice signals without speech, and inserting comfort noise in place of the identified voice signals without speech,

~~The method of claim 23~~ wherein the comfort noise insertion comprises estimating comfort noise in response to at least a portion of the received voice signals without speech.

25. (Currently Amended) The method of claim [[14]] __19__ further comprising receiving packets of voice signals from the packet based network, detecting lost voice signals, decoding the received voice signals, and processing the decoded voice signals to compensate for the lost voice signals.

26 - 27. (Canceled)

28. (Currently Amended) The signal processing system of claim [[26]] __40__ wherein the voiceband signal comprises information modulated by a voiceband carrier.

29. (Currently Amended) The signal transmission system of claim [[26]] __40__ further comprising a switched circuit network coupling the first and the second telephony devices to the signal processing system.

30. (Original) The signal transmission system of claim 29 wherein the switched circuit network comprises a public switching telephone network.

31. (Currently Amended) The signal transmission system of claim [[26]] __40__ wherein the packet based network comprises internet protocol.

32. (Currently Amended) The signal transmission system of claim [[26]] __40__ wherein the packet based network comprises frame relay.

33. (Currently Amended) The signal transmission system of claim [[26]] __40__ wherein the packet based network comprises asynchronous IP transfer mode.

34. Canceled.

35. (Currently Amended) The signal transmission system of claim [[26]] __40__ wherein the first telephony device comprises a telephone.

36. (Currently Amended) The signal transmission system of claim [[26]] __40__ wherein the second telephony device comprises a fax.

37. (Currently Amended) The signal transmission system of claim [[26]] __40__ wherein the second telephony device comprises a modem.

38 - 39. (Canceled)

40. (Currently Amended) A signal transmission system, comprising:

a first telephony device which outputs a voiceband signal;

a second telephony device which outputs a modulated modem data;

a packet based network; and

a signal processing system coupling the first and the second telephony devices to the packet based network, the signal processing system having means for detecting whether a received signal is the modulated signal or the voiceband signal by detecting presence of a predetermined tone, a voice encoder which encodes the voiceband signal to generate a first data stream, a data pump for demodulating the modulated modem data to generate a second data stream, a channel interface which outputs onto the packet based network the first data stream including the encoded voiceband signal or the second data stream including the demodulated modem data, and a voice activity detector which suppresses the voice signals without speech, and ~~The signal transmission system of claim 39 wherein the signal processing system further comprises~~ a comfort noise estimator which generates comfort noise parameters when the voice activity detector suppresses the voice signals, said comfort noise parameters being selectively output on the packet based network.

41. (Canceled)

42. (Currently Amended) A signal transmission system, comprising:

a first telephony device which outputs a voiceband signal;

a second telephony device which outputs a modulated modem data;

a packet based network; and

a signal processing system coupling the first and the second telephony devices to the packet based network, the signal processing system having means for detecting whether a received signal is the modulated signal or the voiceband signal by detecting presence of a predetermined tone, a voice encoder which encodes the voiceband signal to generate a first data stream, a data pump for demodulating the modulated modem data to generate a second data stream, a channel interface which outputs onto the packet based network the first data stream including the encoded voiceband signal or the second data stream including the demodulated modem data, and a decoder for decoding packets of information from the packet based network,

~~The signal transmission system of claim 41~~ wherein the information packets include voice signals, the signal processing system further comprising a voice activity detector which detects the voice signals without speech, and a comfort noise generator which inserts comfort noise in place of the voice signals without speech.

43. (Original)   The signal transmission system of claim 42 wherein the signal processing system further comprises a comfort noise estimator which generates comfort noise parameters from at least a portion of the voice signals without speech, the comfort noise generator being responsive to the comfort noise parameters.

44.   (Currently Amended) The signal transmission system of claim [[41]] 42 wherein the information packets include voice signals, the signal processing system further comprising a voice activity detector which detects lost voice signals, and a lost packet recovery engine which processes the voice signals to compensate for the lost voice signals.

45.   (Currently Amended) The signal transmission system of claim [[26]] 40 wherein the signal processing system further comprises a jitter buffer for receiving packets of information of varying delay from the packet based network and compensating for the delay variation of the information packets.

46.   (Original)   The signal transmission system of claim 45 wherein the jitter buffer outputs an isochronous stream of the received information.

47.   (Original)   The signal transmission system of claim 45 wherein the jitter buffer comprises a queue which buffers the received information for a holding time, and a voice synchronizer which adaptively adjusts the holding time of the queue.

48.-94.   (Canceled)